11/01/2026

Code-F

Aakash
Medical | IIT-JEE | Foundations

Corporate Office : AESL, 3rd Floor, Incuspaze Campus-2, Plot No. 13, Sector-18, Udyog Vihar, Gurugram, Haryana - 122015, ***Ph.***+91-1244168300

MM : 120 CBSE AIATS-SP Class-IX (2025-26) T02F **Time : 180 Min.**

PHYSICS

1. (4)
2. (4)
3. (4)
4. (4)
5. (3)
6. (4)
7. (4)
8. (2)
9. (3)
10. (3)
11. (4)
12. (4)
13. (1)
14. (3)
15. (2)
16. (4)
17. (3)
18. (2)
19. (3)
20. (4)
21. (3)
22. (1)
23. (3)
24. (4)
25. (3)

CHEMISTRY

26. (4)
27. (2)
28. (2)
29. (2)
30. (4)
31. (2)
32. (2)
33. (4)
34. (3)
35. (3)
36. (4)
39. (2)
40. (2)
41. (2)
42. (2)
43. (2)
44. (3)
45. (2)
46. (3)
47. (3)
48. (3)
49. (2)

37. (4)
38. (3)
50. (3)

BIOLOGY

51. (3)
52. (1)
53. (1)
54. (3)
55. (3)
56. (1)
57. (2)
58. (4)
59. (4)
60. (3)
61. (2)
62. (3)
63. (1)
64. (2)
65. (3)
66. (2)
67. (1)
68. (3)
69. (2)
70. (1)
71. (1)
72. (1)
73. (2)
74. (2)
75. (2)

MATHEMATICS

76. (4)
77. (3)
78. (3)
79. (3)
80. (3)
81. (4)
82. (3)
83. (2)
84. (3)
85. (3)
86. (4)
87. (2)
88. (2)
89. (3)
90. (3)
91. (3)
92. (2)
93. (4)
94. (2)
95. (1)
96. (1)
97. (4)
98. (4)
99. (3)
100. (2)

MENTAL ABILITY

101. (4)
102. (1)
103. (3)
104. (2)
105. (2)
106. (1)
107. (4)
108. (2)
109. (3)
110. (2)
111. (1)
112. (4)
113. (1)
114. (4)
115. (3)
116. (4)
117. (3)
118. (3)
119. (2)
120. (2)

Hints and Solutions

PHYSICS

(1) **Answer :** (4)
Solution:
$\frac{mgh}{t} = 4000$
$\Rightarrow \frac{m\times 10\times 10}{60} = 4000$
$\Rightarrow m$ = 2400 kg
ρV = 2400
$\Rightarrow V \times 1000 = 2400$
$\Rightarrow V = 2.4\ m^3$

(2) **Answer :** (4)

(3) **Answer :** (4)
Solution:
By first condition
$K.E_{man} = \frac{1}{2}\ K.E_{Boy}$
$\Rightarrow \frac{1}{2}\ mV^2_{man} = \frac{1}{2}\times\frac{1}{2}\times\frac{m}{2}V^2_{Boy}$ ...(i)
By second condition
$\frac{1}{2}$ m $\left(V_{man}+1\right)^2 = \frac{1}{2}\times\frac{m}{2}V^2_{Boy}$ ...(ii)
Divide (i) by (ii)
$\frac{V^2_{man}}{\left(V_{man}+1\right)^2} = \frac{1}{2}$
$\Rightarrow V_{man} = \frac{1}{\sqrt{2}-1}$ m/s

(4) **Answer :** (4)

(5) **Answer :** (3)
Solution:
Four consecutive compression means 3λ
According to the question
3λ = 9
λ = 3 cm

(6) **Answer :** (4)

(7) **Answer :** (4)
Solution:
Energy lost due to air friction
$= \frac{1}{2}m(15)^2 - \frac{1}{2}m(12)^2$
$= \frac{81m}{2}$
By conservation of energy
$\frac{1}{2}\times m\times\left(15\right)^2 = m\times 10\times h + \frac{81\,m}{4}$
$\Rightarrow h = 9.2\ \text{m}$

(8) **Answer :** (2)

(9) **Answer :** (3)
Solution:
Vibration in one second $= \frac{1}{0.6}$
Vibrations in 9 minutes $= \frac{1}{0.6}\times 9\times 60$

= 900

(10) **Answer :** (3)

(11) **Answer :** (4)
Solution:
Change in K.E. = work done
$\frac{1}{2}mv^2 - \frac{1}{2}mu^2 = F \cdot s$
$\frac{1}{2}m\left(v^2 - u^2\right) = (ma) \cdot s$
$\frac{1}{2}\left[(50)^2 - (30)^2\right] = 5 \cdot s$
$800 = 5 \cdot s$
s = 160 m

(12) **Answer :** (4)

(13) **Answer :** (1)
Solution:
$\because$ 1 unit = 3.6×10^6 J
Therefore
120 unit = $120 \times 3.6 \times 10^6$ J
= 4.32×10^8 J

(14) **Answer :** (3)

(15) **Answer :** (2)
Solution:
$I \propto A^2$
$\frac{A_2 - A_1}{A_1} = \frac{25}{100}$
$\frac{A_1}{A_2} = \frac{4}{5}$
$\frac{I_1}{I_2} = \frac{16}{25}$
$\frac{I_2 - I_1}{I_1} \times 100 = \frac{25 - 16}{16} \times 100$
% Change in intensity = 56.25%

(16) **Answer :** (4)

(17) **Answer :** (3)
Solution:
$t_1 = \sqrt{\frac{2h}{g}} = \sqrt{\frac{2\times 500}{10}} = 10$ s
$t_2 = \frac{500}{330} = 1.51$ s
$\therefore$ Total time = 10 + 1.51 = 11.51 s

(18) **Answer :** (2)
Solution:
P = *Fv*
= 5500 × 2
= 11000 W
= 11 kW

(19) **Answer :** (3)

(20) **Answer :** (4)
Solution:
λ = 15 cm
⇒ λ = 0.15 m
$T = \frac{\lambda}{v} = \frac{0.15}{3} = 0.05$ s

(21) **Answer :** (3)

(22) **Answer :** (1)
Solution:
v = ν × λ

For
350 = ν × λ_a
For steel
3150 = ν × λ_S

⇒ $\frac{\lambda_s}{\lambda_a} = \frac{3150}{350} = 9$

(23) Answer : (3)
Solution:
Compression is a region of high pressure and density.
Rarefaction is a region of low pressure and density.

(24) Answer : (4)

(25) Answer : (3)
Solution:

Initial KE, $E_1 = \frac{p_1^2}{2m}$

⇒ $p_1 = \sqrt{2mE_1}$

Final KE,
$E_2 = 2E_1$

⇒ $p_2 = \sqrt{2mE_2} = \sqrt{2m \times 2E_1} = \sqrt{2} \times p_1$

CHEMISTRY

(26) Answer : (4)
Solution:
Ratio by mass of H : O in a compound of hydrogen and oxygen (H_xO_y) is 1 : 8

$\frac{H}{O} = \frac{1}{8} = \frac{1 \times x}{16 \times y}$

$\frac{16}{8} = \frac{x}{y}$

or 2 : 1

(27) Answer : (2)

(28) Answer : (2)

(29) Answer : (2)

(30) Answer : (4)
Solution:
Formula unit mass of calcium chloride ($CaCl_2$)
= 1 × Atomic mass of Ca + 2 × atomic mass of Cl
= 40 + 2 × 35.5 = 111 u

(31) Answer : (2)

(32) Answer : (2)

(33) Answer : (4)

(34) Answer : (3)

(35) Answer : (3)

(36) Answer : (4)
Solution:

The electronic configuration of Cl is $\begin{matrix} K & L & M \\ 2, & 8, & 7 \end{matrix}$

(37) Answer : (4)

(38) Answer : (3)

Solution:
3 g of carbon combines with 8 g of oxygen
24 g of carbon will combine with $\frac{8}{3} \times 24$
= 64 g of oxygen

(39) Answer : (2)
Solution:
For $^{23}_{14}\text{Si}$
Atomic number = 14
Mass number = 28
∴ Number of protons = Number of electrons = 14
Number of neutrons = 28 – 14 = 14

(40) Answer : (2)

(41) Answer : (2)

(42) Answer : (2)

(43) Answer : (2)
Solution:
On the basis of given data, average atomic mass of element Y will be
⇒ $\left(18 \times \frac{10}{100}\right) + \left(16 \times \frac{90}{100}\right)$
⇒ 1.8 + 14.4
⇒ 16.2 u

(44) Answer : (3)
Solution:
The maximum number of electrons present in a shell is given by $2n^2$.

(45) Answer : (2)
Solution:
Electronic configuration of S = $\begin{matrix} \text{K} & \text{L} & \text{M} \\ 2 & 8 & 6 \end{matrix}$.

(46) Answer : (3)

(47) Answer : (3)

(48) Answer : (3)

(49) Answer : (2)

(50) Answer : (3)

BIOLOGY

(51) Answer : (3)

(52) Answer : (1)

(53) Answer : (1)

(54) Answer : (3)
Solution:
Mixed cropping increases soil fertility and decreases the requirement of fertilizers.

(55) Answer : (3)

(56) Answer : (1)

(57) Answer : (2)

(58) Answer : (4)

(59) Answer : (4)

(60) **Answer :** (3)

(61) **Answer :** (2)

(62) **Answer :** (3)

(63) **Answer :** (1)

(64) **Answer :** (2)
Solution:
Xanthium and *Parthenium* are weeds.

(65) **Answer :** (3)

(66) **Answer :** (2)

(67) **Answer :** (1)

(68) **Answer :** (3)

(69) **Answer :** (2)

(70) **Answer :** (1)

(71) **Answer :** (1)

(72) **Answer :** (1)

(73) **Answer :** (2)

(74) **Answer :** (2)

(75) **Answer :** (2)

MATHEMATICS

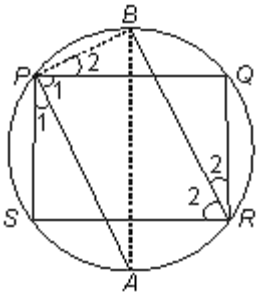
(76) **Answer :** (4)

(77) **Answer :** (3)

(78) **Answer :** (3)

(79) **Answer :** (3)

(80) **Answer :** (3)
Solution:



Join AB and PB.
$\angle SPA = \angle QPA = \angle 1$ [$\because$ PA is bisector of $\angle P$]
Also, $\angle QRB = \angle SRB = \angle 2$ [$\because$ RB is bisector of $\angle R$]
$\angle BPQ = \angle BRQ = \angle 2$ [Angle made by same arc on the circle]
$\therefore \angle APQ + \angle BPQ = \angle 1 + \angle 2$
$= (\angle 1 + \angle 2)$
$= 90°$ [$\because$ $2\angle 1 + 2\angle 2 = 180° \Rightarrow \angle 1 + \angle 2 = 90°$]
Since, $\angle APB = 90°$
So, AB is diameter of circle.
$\Rightarrow AB = 2 \times$ radius $= 2 \times 12 = 24$ cm

(81) **Answer :** (4)

(82) **Answer :** (3)

(83) **Answer :** (2)

(84) **Answer :** (3)

(85) **Answer :** (3)

(86) **Answer :** (4)

(87) **Answer :** (2)

(88) **Answer :** (2)

(89) **Answer :** (3)
Solution:
Volume of cuboid = $\ell \times b \times h$
$1728 = 4x \times 2x \times x$
$\Rightarrow 8x^3 = 1728$
$\Rightarrow x^3 = 216$
$\Rightarrow x = 6$
$\therefore\ \ell = 24$ cm, $b = 12$ cm and $h = 6$ cm
Now, the length of the longest diagonal $= \sqrt{\ell^2 + b^2 + h^2}$
$= \sqrt{24^2 + 12^2 + 6^2}$
$= 6\sqrt{21}$ cm

(90) **Answer :** (3)
Solution:

Adjusted frequency = $\frac{\text{Frequency}}{\text{Class width}} \times$ Minimum class width

$\therefore$ Required sum of adjusted frequency is
$= \frac{36}{20} \times 5 + \frac{90}{30} \times 5$
$= \frac{36}{4} + \frac{90}{6}$
$= 9 + 15$
$= 24$

(91) **Answer :** (3)

(92) **Answer :** (2)

(93) **Answer :** (4)

(94) **Answer :** (2)

(95) **Answer :** (1)

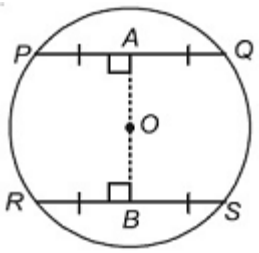
(96) **Answer :** (1)

(97) **Answer :** (4)

(98) **Answer :** (4)

(99) **Answer :** (3)

(100) **Answer :** (2)
Solution:



Here,
$OA \perp PQ$ [$\because$ OA bisects PQ]
and $OB \perp RS$ [$\because$ OB bisects RS]

$\Rightarrow$ $PQ \parallel RS$

MENTAL ABILITY

(101) Answer : (4)
Solution:
Squares of prime numbers.

(102) Answer : (1)
Solution:
Series of prime number.

(103) Answer : (3)
Solution:
Alternate series.

(104) Answer : (2)
Solution:
a b c x | a b c x | a b c x | a b c x

(105) Answer : (2)
Solution:
Unit : Quantity.

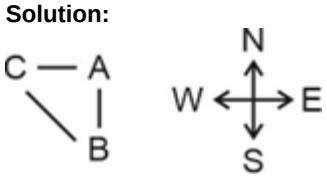
(106) Answer : (1)
Solution:
$n : n^4$

(107) Answer : (4)
Solution:
585 ÷ 39 + 15 – 6 × 5

(108) Answer : (2)
Solution:
10,00,000
10,000
100
+ 10

1010110

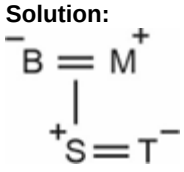
(109) Answer : (3)
Solution:



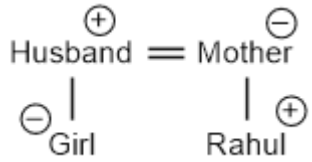
(110) Answer : (2)
Solution:
Water is called tree.

(111) Answer : (1)
Solution:
Each letter is coded to a letter at the same position from the last in alphabetical order.

(112) Answer : (4)
Solution:



(113) Answer : (1)
Solution:



(114) Answer : (4)
Solution:
1900 is not divisible by 400.

(115) Answer : (3)
Solution:
13 – June – 1912
1600 + 300 + 11 + Jan – May + June
= 0 + 1 + 4 + 9 + 3 + 1 + 3 + 2 + 3 + 6
= 4 → Thursday

(116) Answer : (4)
Solution:
The hands skip a, time between 11'O clock and 1'O clock → 11 times
So, in 24 hours, we have 22 times.

(117) Answer : (3)
Solution:
Use $\theta = 30\,H - \frac{11}{2}\,M$ and $\theta = \frac{11}{2}\,M - 30\,H$, where $\theta = 90°$.

(118) Answer : (3)
Solution:
Total rectangles = 3 + 3 + 10 + 2 = 18

(119) Answer : (2)
Solution:
Flip vertically.

(120) Answer : (2)
Solution:
Flip horizontally.